Verdi V-Series

High-Power, Low-Noise, Green DPSS Lasers

The Verdi -V laser is the first-choice pump laser for researchers performing demanding carrier envelope phase (CEP) stabilized ultrafast experiments. That's because it sets the industry standard for low-noise DPSS lasers. Whereas other DPSS lasers use elaborate schemes to minimize "green noise," the Verdi -V laser is based on a single longitudinal mode cavity, eliminating this source of instability. This makes the Verdi -V series perfect for other low-noise pumping applications, e.g., pumping continuous-wave (CW) OPOs or Ti:Sapphire lasers.

In addition to driving high-performance systems, the single-mode output means that Verdi -V lasers are also the best choice for applications needing superior coherence and narrow-linewidth. These include holography and long-path interferometry, atom cooling and trapping, and high-resolution spectroscopy.

Verdi -V lasers also provide the highest electrical efficiency, making them "green" lasers in every way. And, with output power from 6 Watts up to 18 Watts, there is a model for every power budget.

FEATURES

- Single-longitudinal-mode output
- Optical noise <0.02% RMS measured from 10 Hz to 1 GHz
- Superior diode-to-green conversion efficiency (>25%)
- Ultra-long-life AAA™ (Aluminum-free Active Area) laser diode material
- PermAlign™ solder-bonded optics technology
- Sealed laser head

APPLICATIONS

- Amplifier Seeding
- Holography
- Interferometry
- Atom Cooling and Trapping
- Continuous Wave OPO Pumping
- Ti:Sapphire Pumping

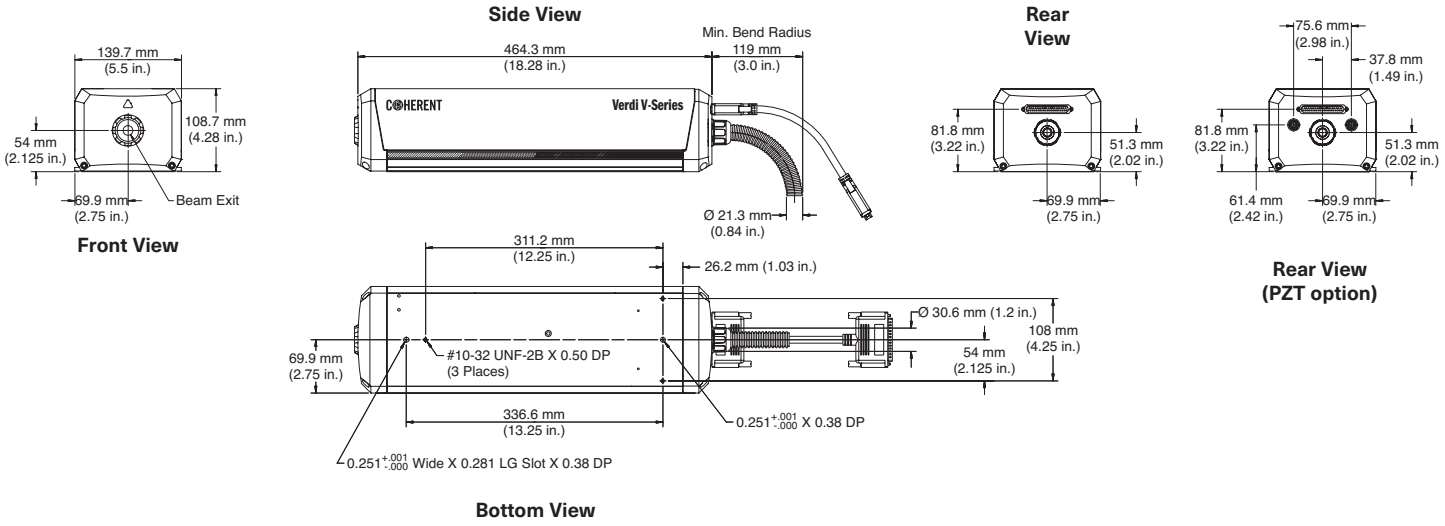
COHERENT

Specifications	Verdi V6	Verdi V10	Verdi V18
Output Power (W)	>6	>10	>18
Wavelength (nm)	532		
Linewidth[1] (MHz)	<5		
Beam Diameter[2] (mm)	2.25 ±10%		
Beam Divergence[3] (mrad)	<0.5		
M^2	<1.1		
Pointing Stability[4] (µrad/°C)	<2		
Power Stability[5] (%)	±1		
Noise[6] (RMS)	<0.02		
Polarization	Vertical, >100:1		
Operating Voltage (VAC)	100 to 240		
Frequency (HZ)	50/60		
Max. Operating Current (A) (at 100 VAC)	7.8	7.8	13
PZT Input Voltage[7] (V/channel)	0 to +100		
PZT Tuning Range[7] (GHz)	>8.2	>8.2	>6.4
PZT Bandwidth[7]	DC to 20 kHz		
Power Consumption Maximum Typical (W)	 780 W 380	 780 W 380	 1.3 kW 900
Number of Diodes (FAPs)	1	1	2
Cooling Requirements Laser Head Power Supply	 Air-cooled (water cooling optional) Air-cooled	 Closed-loop water cooling Air-cooled	 Closed-loop water cooling Air-cooled
Range of Operating Temperature Laser Head Power Supply	 15 to 45°C (59 to 113°F) 15 to 35°C (59 to 95°F)		
Weight Laser Head Power Supply	 8 kg (18 lbs.) 27 kg (59 lbs.)	 8 kg (18 lbs.) 27 kg (59 lbs.)	 8 kg (18 lbs.) 33 kg (73 lbs.)
Length of Umbilical	3 m (10 ft.)		
Diameter of Umbilical	2.15 cm (0.85 in.)		

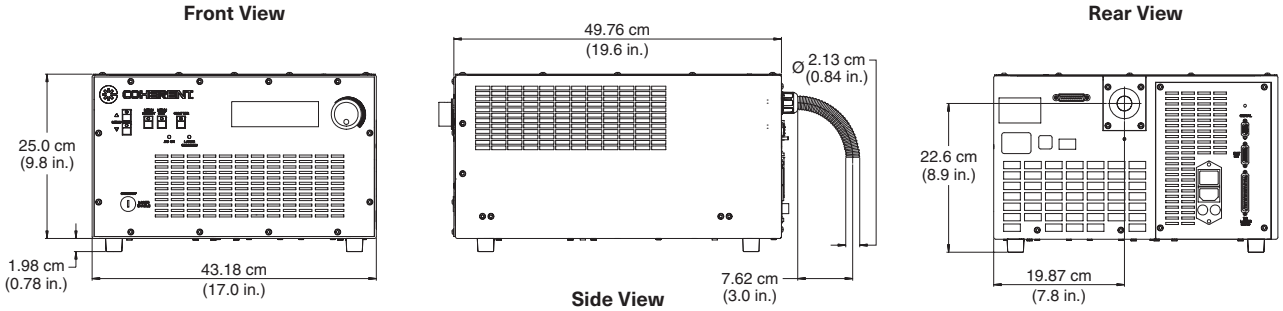
Notes:
1. Measured over 50 msec with a thermally stabilized reference etalon at maximum specified output power.
2. $1/e^2$ and located within ~0.5 m of the exit port.
3. Full angle divergence.
4. Measured as far-field x and y positions over a 25 °C to 35 °C temperature change.
5. Measured over 2 hours after a 15 minute warm-up.
6. Measured from 10 Hz to 1 GHz.
7. PZT optional.

Mechanical Specifications

Verdi V-Series Laser Head



Verdi V-Series Power Supply



For more information
www.coherent.com